



Attune acoustic focusing cytometer brings technology developed at LANL to the marketplace

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Applications of first-of-its-kind cytometer system in basic cell biology research and drug discovery

Los Alamos, New Mexico, January 7, 2010—Life Technologies Corporation recently announced the release of the Attune Acoustic Focusing Cytometer, a first-of-its-kind cytometer system that uses acoustic waves to precisely control the movement of cells during analysis.

Flow cytometry allows scientists to quantitate and examine cells by passing them through a laser-based detection device. Thousands of cells per second may be analyzed individually, allowing rapid characterization of entire populations of cells and the detection of rare cells. Cell biologists use flow cytometry for a wide range of

applications, including the study of cellular protein expression, immunophenotyping, quantifying cellular DNA, and measurement of a variety of cellular phenotypes for the purposes of basic cell biology research and drug discovery.

Attune potentially will improve the sensitivity, throughput, and accuracy of flow cytometry-based assays, while also enabling a greater variety of assay types than can be performed on traditional hydrodynamically focused cytometer systems. Additionally, because the Acoustic Focusing Cytometer reduces the need for sheath fluid, the instrument's size and complexity, use of consumables, and generation of waste all are decreased.

The Attune Acoustic Focusing Cytometer is based on a portfolio of intellectual property developed at Los Alamos National Laboratory (LANL), for which Life Technologies holds the exclusive commercial license rights. The field of flow cytometry was originally invented at LANL in the 1960s. The Bioscience Division at LANL currently is home to the National Flow Cytometry Resource (NFCR), a center for the development and application of flow cytometry technology. Over the past 28 years, LANL's NFCR has continued to advance flow cytometry instrumentation and assays with the support of the National Center for Research Resources at the National Institutes of Health (NIH), which sponsored the original acoustic focusing cytometer research.

As part of LANL's Technology Transfer mission, which moves advanced technologies out of the Laboratory for the benefit of the U.S. taxpayers, LANL spun out in 2006 a new company, Acoustic Cytometry Systems, LLC (ACS) to commercialize the acoustic flow cytometry technology. ACS was subsequently acquired in 2008 by Invitrogen Corporation, which later merged with Applied Biosystems to form Life Technologies. The company continued the development of the LANL technology and is now bringing the Attune Acoustic Focusing Cytometer to researchers worldwide.

"Acoustic focusing enables both longer transit times and higher throughput, which simultaneously permits better interrogation of every cell in a sample as well as the analysis of much larger numbers of cells," said Mike Olszowy, head of flow cytometry at Life Technologies. By further developing LANL's acoustic cytometer technology and launching it as a commercial product, Life Technologies is poised to bring researchers and scientists "one step closer to... precise quantitation of molecular phenotypes at the single cell level," a huge improvement in today's biological and medical research capabilities.

Gary Resnick, LANL's Bioscience Division leader, stated that "the national laboratories are ideally suited to bring new innovation to the biological sciences via multidisciplinary research in physics, materials science, chemistry and biology, such as the work that generated the acoustic flow cytometer with sponsorship from the NIH National Center for Research Resources."

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